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1. A receiver of global positioning system (GPS) signals comprising:

a decimation circuit for producing a subsampled in-phase (I) signal and a subsampled quadrature (Q) signal from received GPS signals;

a quantizer for producing quantized I and Q samples from the subsampled I and Q signals;

a convolution processor for producing I and Q correlations.

- 2. The receiver of claim 2 Wherein the quantized I and Q samples are represented using two bits.
- 3. The receiver of claim 1 wherein the quantizer produces the quantized I and Q samples by assigning each sample of the subsampled I and Q signals to one of a plurality of bins in accordance with one or more magnitude thresholds.
- 4. The receiver of claim 3 wherein samples of the subsampled I and Q signals having a zero value are assigned to one of the plurality of bins in a substantially random manner.
- 5. The receiver of claim 3 wherein samples of the subsampled I and Q signals having a zero value are assigned to one of the plurality of bins according to a repeating pattern.
- 6. The receiver of claim 1 further comprising a second quantizer for quantizing the I and Q correlations.
- 7. A method of receiving global positioning system (GPS) signals comprising:

decimating received GPS signals to produce a subsampled in-phase (I) signal and a subsampled quadrature (Q) signal;

quantizing the subsampled I and Q signals to produce quantized I and Q samples;

multiplying a C/A reference code with the quantized I and Q samples to

produce I and Q correlations.

- 8. The method of claim 7 wherein the step of quantizing the subsampled I and Q signals further comprises representing the I and Q samples with two bits.
- The method of claim 7 wherein the quantized I and Q samples are produced by assigning each sample of the subsampled I and Q signals to one of a plurality of bins in accordance with one dr more magnitude thresholds.
- 10. The method of claim 9 wherein samples of the subsampled I and Q signals having a zero value are assigned to one of the plurality of bins in a substantially random manner.
- 11. The method of claim 9 wherein samples of the subsampled I and Q signals having a zero value are assigned to one of the plurality of bins according to a repeating pattern.
- 12. The method of claim 7 further comprising quantizing the I and Q correlations.
- 13. A receiver of global positioning system (GPS) signals comprising:
- a decimation circuit for producing a subsampled in-phase (I) signal and a subsampled quadrature (Q) sighal from received GPS signals;
 - a convolution processor for producing I and Q correlations;
- a divider for reducing the humber of bits of precision of the I and Q correlations to produce quantized I and Q correlations;
- a signal normalizer for normalizing the quantized I) and Q correlations to produce complex magnitude values; and
 - a magnitude accumulator for summing the complex magnitude values.
- 14. A receiver of global positioning system (GPS) signals comprising:
- a decimation circuit for producing a subsampled in-phase (I) signal and a subsampled quadrature (Q) signal from received GPS signals;



a convolution processor for producing I and Q correlations;

- a magnitude approximation circuit for normalizing the I and Q correlations to produce complex magnitude values; and
 - a magnitude accumulator for summing the complex magnitude values.
- 15. The receiver of claim 14 wherein the magnitude approximation circuit produces the complex magnitude values by individually computing the absolute value of the I and Q values and outputting $|I| + \frac{1}{2}|Q|$ when $|I| \ge |Q|$, and $|Q| + \frac{1}{2}|I|$ when |Q| > |I|.
- 16. A receiver of global positioning system (GPS) signals comprising:
- a decimation circuit for producing a subsampled in-phase (I) signal and a subsampled quadrature (Q) signal from received GPS signals;
 - a convolution processor fdr producing I and Q correlations;
- a signal normalizer for normalizing the quantized I and Q correlations to produce complex magnitude values;
- a magnitude accumulator for summing subsets of the complex magnitude values; and
- a minimum value register for storing a minimum magnitude value for each of the subsets of complex magnitude values to produce an offset, and for subtracting the offset from the complex magnitude values.
- 17. The receiver of claim 16 further comprising an offset value register for accumulating offsets stored in the minimum value register.